

## AMENDMENT TO THE SPECIFICATION

*At the top of the first page, before the first section, please insert:*

### -- Cross Reference to Related Applications

This is a continuation of U.S. Patent Application Serial Number 09/746,147, filed 12/22/2000, which is a continuation of U.S. Patent Application Serial Number 09/001,869, filed 12/31/1997, which is a continuation-in-part to U.S. Patent Application Serial Number 09/979,588, filed 11/26/1997. —

*Please amend the paragraph beginning at page 58, line 13, as follows:*

In a preferred embodiment, the methods of ~~co-pending US patent application Serial No. \_\_\_\_\_, filed 11/14/97~~ US Patent No. 6,457,032, issued 9/24/2002, entitled "Efficient, Flexible Digital Filtering", and ~~co-pending US patent application Serial No. 08/727,721, filed 10/07/96~~ U.S. Patent No. 6,408,109, issued 6/18/2002, entitled "Apparatus and Method for Detecting and Sub-Pixel Location of Edges in a Digital Image" "Fast, Inexpensive, Subpixel Edge Detection" are used for feature extraction, Cognex Corporation's PatQuick™ tool is used to determine the starting pose, and the multi-resolution style of figure 26 is used. The following parameter settings are used for feature extraction by default. Many other strategies can be devised to suit specific applications.

*Please amend the paragraph beginning at page 59, line 2, as follows:*

where  $w$  and  $h$  are the width and height, respectively, of the pattern 100 in pixels and the *floor* function gives the largest integer that is less than or equal to its argument. Note that sub-sampling by  $n$  means taking every  $n^{\text{th}}$  pixel. The low-pass filter 310 uses a filter size parameter ("s" in ~~co-pending US patent application Serial No. \_\_\_\_\_, filed 11/14/97~~ U.S. Patent No. 6,457,032, issued 9/24/02, entitled "Efficient Flexible Digital Filtering") equal to one less than the computed sub-sample amount. The Cartesian to polar conversion module 340 multiplies the gradient magnitude values by 2.0 to improve precision at the low end, where most gradient values lie.